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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,959	06/21/2006	Tsuneo Nakata	U2054.0156	9615

32172 7590 12/23/2009

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EXAMINER	
CEHIC, KENAN	
ART UNIT	PAPER NUMBER
2473	
MAIL DATE	DELIVERY MODE
12/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/526,959	NAKATA ET AL.	
	Examiner	Art Unit	
	KENAN CEHIC	2473	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claim 1, 2, 21, 22, 41, 42, 61-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prehofer et al. (US 2008/0205308) in view of Dawson et al (US 5,594,490)

For claim 1, Prehofer discloses A method of communication between a transmitting node and a receiving node (see fig. 17, GW, MN and fig.6 GW, RN, MN), characterized in that: the transmitting node (see fig. 17 GW/MN) provides a first group flow having one flow or more (see fig. 17; TUN2, TCP Tunnel) based upon a first criterion (see fig. 17 TCP Tunnel, APx, APx', 1.1, 2.2, IPx'; section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…") and a second group flow having one flow or more (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166) based upon a second criterion relating to a retransmitting control (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion

of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), assigns a first identifier to each flow belonging to said first group flow, said first identifier being unique (see fig. 17; TUN2, TCP Tunnel, APx, APx', 1.1, 2.2, IPx', section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…2.2…1.1…"; section 0165 "APx'…TCP header with a TCP source and destination address"),

and assigns a second identifier to each flow belonging to said second group flow (see fig. 17; TUN1, IP Tunnel, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx …ad hoc source address..ad hoc destination address"; section 0166), said

second identifier being unique (see fig. 17; TUN1, IP Tunnel, IPxx', APxx' S:A, D:D; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…"; section 0166); and the transmitting node classifies the packets (see fig. 17; GW/MN; IPxx'), which were input, into one flow or more belonging to said first

group flow, based upon said first criterion (see fig. 15, fig. 17 TCP Tunnel, APx, APx', 1.1, 2.2, IPx'; section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…embedded in…tunneling protocol such as TCP"),

yet

classifies them into one flow or more belonging to said

second group flow, based upon said second criterion (see fig. 17; TUN1, IP Tunnel, IPxx', APxx' S:A, D:D; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…"; section 0166),

affixes to said packets said first identifier (see fig. 17; TUN2, TCP Tunnel, APx, APx', 1.1, 2.2, IPx', section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…2.2…1.1…"; section 0165 "APx'…TCP header with a TCP source and destination address"), said second identifier (see fig. 17; TUN1, IP Tunnel, IPxx', APxx' S:A, D:D; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…"; section 0166), a second sequential number (see section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), said second sequential number being unique (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission

request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171) within flows specified by said second identifier (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166), and transmit them (see fig. 15 and 17);

the receiving node (see fig. 17, MN) classifies all received packets based upon the second identifier (see fig. 17; TUN1, IP Tunnel, IPxx', APxx' S:A, D:D, MN, D; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…"; section 0166), and checks the packets having the second sequential number, which were not received, with each second group flow, and requests the transmitting node of retransmission thereof (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission

request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 “lost packet detector…incorrect sequence…"; section 0143-144 “detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…”)

the transmitting node (see fig. 15 and 17, GW) retransmits the packets of the second group flow having the second sequential number requested by the receiving node (see section 0042 “retransmit…in response to receiving ...request...specific sequence number"; 0048 “transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 “lost packet detector…incorrect sequence…"; section 0143-144 “detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again”); and the receiving node (see fig. 15 and 17, MN) classifies all received packets based upon the first identifier (see fig. 17 TCP Tunnel, APx, APx’, 1.1, 2.2, IPx’; section 0163-166 “TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…";),

For claim 21, Prehofer discloses A node, said node (see figs. 6,15, 17; GW) being configured of a transmitting section for transmitting a packet (see fig. 6; TRG, TRN; fig. 17; IPX, IPx’, IPxx’; section 0079 transmission / reception unit") and a receiving section for receiving the packet (see fig. 6; TRG, TRN; fig. 17; IPX, IPx’, IPxx’; section 0079

transmission / reception unit")and taking a retransmitting control and performing TCP of the packet independently (section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…embedded in…tunneling protocol such as TCP"; see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…") characterized in that:

said transmitting section includes:

a means (see fig. 6, GW, RN, MN, TRG, TRN, IPTUN, TCPTUN, SNI, ;section 0157-162) for affixing to the transmission packet a first identifier (see fig. 17; TUN2, TCP Tunnel, APx, APx', 1.1, 2.2, IPx', section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…2.2…1.1…"; section 0165 "APx'…TCP header with a TCP source and destination address"), said first identifier being assigned in

a one-to-one manner to each flow of a first group flow

based upon a first criterion (see fig. 17 TCP Tunnel, APx, APx', 1.1, 2.2, IPx'; section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…"), a second identifier (see fig. 17; TUN1, IP Tunnel, IPxx',

APxx' S:A, D:D; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…"; section 0166), said second identifier

being assigned in a one-to-one manner to each flow of a second group flow based upon a second criterion relating to a retransmitting control (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), a second sequential number (see section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), said second sequential number being unique within

each flow belonging to said second group flow (see section 0042 “retransmit…in response to receiving ...request...specific sequence number"; 0048 “transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 “lost packet detector…incorrect sequence…"; section 0143-144 “detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again”; section 0033, 0093, 0148 “sequence number…accounting…”; section 0042 “specific sequence number…” section 0045 “first tunnel…accounting…”; section 0062 “insertion of sequence numbers…IP1-IP5”; fig. 7; section 0095-97 “sequence number insertion” section 0151 “TUN1…accounting…”; section 0157, 0162-263 “TUN1…flow control and accounting…”; section 0171), flows specified by said second identifier (see fig. 17; TUN1, IP Tunnel, APxx’, S:A, D:A, IPxx’; section 0051 "IP tunnel"; section 0156-161 “IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…”; section 0166), and transmit it (see fig. 15 and 17);

a means (see fig. 6, GW, RN, MN, TIS’, ACC’, ACKM) for specifying the packet, for which

retransmission was requested by the node having received

the packet (see section 0042 “retransmit…in response to receiving ...request...specific sequence number"; 0048 “transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 “lost packet detector…incorrect sequence…"; section 0143-144

"detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…")

, from said second identifier (see fig. 17 TCP Tunnel, APx, APx', 1.1, 2.2, IPx'; section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…") and second

sequential number to retransmit its packet (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…")

: and that said receiving section includes:

a means (see fig. 6, GW, RN, MN, ACKSN, SNO, ARQ, LPD, IPTUN) for classifying all received packets based upon the second identifier (see fig. 17; TUN1, IP Tunnel, IPxx', APxx' S:A, D:D, MN, D; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…"; section 0166), and checks the packets having the second sequential number, which were not

received, with each second group flow, and requests the

transmitting node of retransmission thereof (see section 0042 "retransmit…in response to

receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…")

; and a means for classifying all received packets based upon said first identifier (see fig. 17 TCP Tunnel, APx, APx', 1.1, 2.2, IPx'; section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…";)

For claim 41, Prehofer discloses computer-readable medium storing a controlling program for (see section 0177 "computer program product") for a processor controlled-node, said node (see figs. 6,15, 17; GW, RN, MN) being configured of a transmitting section for transmitting a packet (see fig. 6; TRG, TRN; fig. 17; IPX, IPx', IPxx'; section 0079 transmission / reception unit") and a receiving section for receiving the packet (see fig. 6; TRG, TRN; fig. 17; IPX, IPx', IPxx'; section 0079 transmission / reception unit")and taking a retransmitting control and performing TCP of the packet independently (section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…embedded in…tunneling protocol such as TCP"; see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a

transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 “lost packet detector…incorrect sequence…"; section 0143-144 “detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…”), characterized in that said controlling program causes said node to function as:

a means (see fig. 6, GW, RN, MN, TRG, TRN, IPTUN, TCPTUN, SNI, ;section 0157-162) for affixing to the transmission packet a first identifier (see fig. 17; TUN2, TCP Tunnel, APx, APx’, 1.1, 2.2, IPx’, section 0156-161 “IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…2.2…1.1…”; section 0165 “APx’…TCP header with a TCP source and destination address”), said first identifier being assigned in

a one-to-one manner to each flow of a first group flow

based upon a first criterion (see fig. 17 TCP Tunnel, APx, APx’, 1.1, 2.2, IPx’; section 0163-166 “TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…"), a second identifier (see fig. 17; TUN1, IP Tunnel, IPxx’, APxx’ S:A, D:D; section 0051 "IP tunnel"; section 0156-161 “IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…”; section 0166), said second identifier

being assigned in a one-to-one manner to each flow of a second group flow based upon a second criterion relating to a retransmitting control (see section 0042 “retransmit…in

response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), a second sequential number (see section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), said second sequential number being unique within

each flow belonging to said second group flow (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW

transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), flows specified by said second identifier (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166), and transmit it (see fig. 15 and 17);

a means (see fig. 6, GW, RN, MN, TIS', ACC', ACKM) for specifying the packet, for which

retransmission was requested by the node having received

the packet (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…")

, from said second identifier (see fig. 17 TCP Tunnel, APx, APx', 1.1, 2.2, IPx'; section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…") and second

sequential number to retransmit its packet (see section 0042 “retransmit…in response to receiving ...request...specific sequence number"; 0048 “transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 “lost packet detector…incorrect sequence…"; section 0143-144 “detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…”) ;

a means (see fig. 6, GW, RN, MN, ACKSN, SNO, ARQ, LPD, IPTUN) for classifying all received packets based upon the second identifier (see fig. 17; TUN1, IP Tunnel, IPxx’, APxx’ S:A, D:D, MN, D; section 0051 "IP tunnel"; section 0156-161 “IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…”; section 0166), and checks the packets having the second sequential number, which were not

received, with each second group flow, and requests the

transmitting node of retransmission thereof (see section 0042 “retransmit…in response to receiving ...request...specific sequence number"; 0048 “transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 “lost packet detector…incorrect sequence…"; section 0143-144 “detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…”)

; and a means for classifying all received packets based upon said first identifier (see fig. 17 TCP Tunnel, APx, APx’, 1.1, 2.2, IPx’; section 0163-166 “TCP tunnel…TCP protocol

can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…";)

For claim 61, Fantaske discloses A communicating method, characterized in affixing an identifier for identifying a transmission flow (see fig. 17; TUN2, TCP Tunnel, APx, APx', 1.1, 2.2, IPx', section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…2.2…1.1…"; section 0165 "APx'…TCP header with a TCP source and destination address"; see fig. 17; TUN1, IP Tunnel, IPxx', APxx' S:A, D:D; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…"; section 0166) and a sequential number within said transmission flow to a communication packet (see section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171) in addition to information for a
TCP to take a retransmitting control thereof per
transmission flow on the receiving side (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK

3 (2); section 0124-126 “lost packet detector…incorrect sequence…"; section 0143-144 “detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again”; section 0033, 0093, 0148 “sequence number…accounting…”; section 0042 “specific sequence number…” section 0045 “first tunnel…accounting…”; section 0062 “insertion of sequence numbers…IP1-IP5”; fig. 7; section 0095-97 “sequence number insertion” section 0151 “TUN1…accounting…”; section 0157, 0162-263 “TUN1…flow control and accounting…”; section 0171), based upon said
identifier and said sequential number (see section 0042 “retransmit…in response to receiving ...request...specific sequence number"; 0048 “transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 “lost packet detector…incorrect sequence…"; section 0143-144 “detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again”; section 0033, 0093, 0148 “sequence number…accounting…”; section 0042 “specific sequence number…” section 0045 “first tunnel…accounting…”; section 0062 “insertion of sequence numbers…IP1-IP5”; fig. 7; section 0095-97 “sequence number insertion” section 0151 “TUN1…accounting…”; section 0157, 0162-263 “TUN1…flow control and accounting…”; section 0171).

For claim 62, Fantaske discloses A communicating method, characterized in affixing an identifier for identifying a transmission flow (see fig. 17; TUN2, TCP Tunnel, APx,

APx', 1.1, 2.2, IPx', section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…2.2…1.1…"; section 0165 "APx'…TCP header with a TCP source and destination address"; see fig. 17; TUN1, IP Tunnel, IPxx', APxx' S:A, D:D; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…"; section 0166) and a sequential number within said transmission flow to a communication packet (see section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171) in addition to information for a TCP to detect a loss of the packet per transmission flow on the receiving side (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific

sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), based upon said
identifier and said sequential number (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171).

For claim 63 and similarly 64, Prehofer discloses a means (see fig. 6, GW, RN, MN, TRG, TRN, IPTUN, TCPTUN, SNI, ;section 0157-162) for affixing to the packet a first identifier (see fig. 17; TUN2, TCP Tunnel, APx, APx', 1.1, 2.2, IPx', section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…2.2…1.1…"; section 0165 "APx'…TCP header with a TCP source and destination address"), said first identifier being assigned in

a one-to-one manner to each flow of a first group flow

based upon a first criterion (see fig. 17 TCP Tunnel, APx, APx', 1.1, 2.2, IPx'; section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…"), a second identifier (see fig. 17; TUN1, IP Tunnel, IPxx', APxx' S:A, D:D; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx global source address…global destination address…ad hoc source address..ad hoc destination address.…S:A…D:D…"; section 0166), said second identifier

being assigned in a one-to-one manner to each flow of a second group flow based upon a second criterion relating to a retransmitting control (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), a second sequential number (see section 0033, 0093, 0148 "sequence

number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), said second sequential number being unique within

each flow belonging to said second group flow (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171), flows specified by said second identifier (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166), and transmit it (see fig. 15 and 17)

a means (see fig. 6, GW, RN, MN, TIS', ACC', ACKM) for retransmitting the lost packets , which were detected, per transmission flow (see section 0042 "retransmit…in

response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…GW transmits the requested packet..again"; section 0033, 0093, 0148 "sequence number…accounting…"; section 0042 "specific sequence number…" section 0045 "first tunnel…accounting…"; section 0062 "insertion of sequence numbers…IP1-IP5"; fig. 7; section 0095-97 "sequence number insertion" section 0151 "TUN1…accounting…"; section 0157, 0162-263 "TUN1…flow control and accounting…"; section 0171) based upon said second identifier (see fig. 17 TCP Tunnel, APx, APx', 1.1, 2.2, IPx'; section 0163-166 "TCP tunnel…TCP protocol can be a light version that does not perform retransmits and...congestion control…TCP header with a TCP source and destination address…TCP packet…") and said second sequential number (see section 0042 "retransmit…in response to receiving ...request...specific sequence number"; 0048 "transmit…retransmission request…including a sequence number of a transmission packet"; fig. 15, IP2, SEL_ACK 3 (2); section 0124-126 "lost packet detector…incorrect sequence…"; section 0143-144 "detect…packet…lost…retransmission request packet…sequence number 2 of...packet which is requested to the retransmitted…") ;

For claim 2, Prehofer discloses characterized in that the transmitting node and the receiving node are connected via one communicating path (see fig. 17), the second group

flow of the transmitting node is comprised of a single flow (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166), and the packets are transmitted (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166) by utilizing a single communicating path (see fig. 17).

For claim 22 and 42, Prehofer discloses characterized in that each of the nodes is connected to the other via one communicating path (see fig. 17), the second group flow of the transmitting node is comprised of a single flow (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166), and the packets are transmitted (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166) by utilizing a single communicating path (see fig. 17).

For claim 6 and similarly 27, 47, Prehofer discloses characterized in that the transmitting node is a transmitting-side transferring node for transferring the packet (see fig. 17; GW, IPx, IPx', IPxx'), transmitted by a separate communicating node (see fig. 17, RN/MN),

and the receiving node is a receiving-side transferring node for transferring the packet (see fig. 17; GW, IPx, IPx', IPxx'), received by a separate communicating node (see fig. 17, RN/MN).

For claim 7 and similarly 28, 48, Prehofer discloses characterized in that the transmitting node and the receiving node are connected via one communicating path (see fig. 17, GW, MN, IPTUN), the second group flow of the transmitting node is comprised of a single flow (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166), and the packets are transmitted by utilizing a single communicating path (see fig. 17; TUN1, IP Tunnel, APxx', S:A, D:A, IPxx'; section 0051 "IP tunnel"; section 0156-161 "IPTUN..TUN1 is used for flow control and accounting…IP packets…APxx…ad hoc source address..ad hoc destination address…S:A…D:D…"; section 0166).

Prehofer does not explicit explain the following:

For claim 1 and similarly 21, 41,63, 64, criterion relating to a sequencing; affixing a first sequential number, said first sequential number being unique within a flow; sequences the packets within each first group flow based upon the first sequential number, and performs a receiving process of the sequenced packets in the sequenced order.

For claim 60 and similarly 61, sequencing

Dawson from the same or similar field of endeavor discloses the following features:

For claim 1 and similarly 21, 41,63, 64, Dawson discloses criterion relating to a sequencing (see col 6 lines 55-56 "TCP…reorganized into proper order; col 9 lines 35-41 " col 13 lines 22-30 "TCP…sequence number…unique…" col 13 lines 50-62 "sequence number…maybe re-organized…"; see fig. 3, 61; col 9 line 35-41 "sequentially…stored data"); affixing a first sequential number (see col 6 lines 55-56 "TCP…reorganized into proper order; col 9 lines 35-41 " col 13 lines 22-30 "TCP…sequence number…unique…" col 13 lines 50-62 "sequence number…maybe re-organized…"; see fig. 3, 61; col 9 line 35-41 "sequentially…stored data"), said first sequential number being unique within a flow (see col 6 lines 55-56 "TCP…reorganized into proper order; col 9 lines 35-41 " col 13 lines 22-30 "TCP…sequence number…unique…" col 13 lines 50-62 "sequence number…maybe re-organized…"; see fig. 3, 61; col 9 line 35-41 "sequentially…stored data"); sequences the packets within each first group flow based upon the first sequential number (see col 6 lines 55-56 "TCP…reorganized into proper order; col 9 lines 35-41 " col 13 lines 22-30 "TCP…sequence number…unique…" col 13 lines 50-62 "sequence number…maybe re-organized…"; see fig. 3, 61; col 9 line 35-41 "sequentially…stored data"), and performs a receiving process of the sequenced packets in the sequenced order (see col 6 lines 55-56 "TCP…reorganized into proper order; col 9 lines 35-41 " col 13 lines 22-30 "TCP…sequence number…unique…" col 13 lines 50-62 "sequence number…maybe re-organized…"; see fig. 3, 61; col 9 line 35-41 "sequentially…stored data").

For claim 60 and similarly 61, sequencing (see col 6 lines 55-56 "TCP…reorganized into proper order; col 9 lines 35-41 " col 13 lines 22-30 "TCP…sequence number…unique…"

col 13 lines 50-62 "sequence number…maybe re-organized…"; see fig. 3, 61; col 9 line 35-41 "sequentially…stored data").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Prehofer by using the above recited features, as taught by Dawsom, in order to provide a method of simultaneously receiving retransmitted packets that were received in error and also receiving regular/ continues streaming and where packets can be re-transmitted to different receiving stations simultaneously (see Dawsone col 3)

2. Claims 3, 23, 43 rejected under 35 U.S.C. 103(a) as being unpatentable over Prehofer et al. (US 2008/0205308) and Dawson et al (US 5,594,490) as applied to claim 1/21/41 above, further in view of Sreejith et al. (US 2003/0202511)

For claim 3, 23, 43, Prehofer and Dawson discloses the claimed invention as described above.

For claim 3, 23, 43, Prehofer discloses characterized in that in a case where a plurality of communicating paths for transmitting the packet exist (see fig. 5a; AR, MN; section 0014 "main route…alternative route"; section 0084,0087, 0117)

Prehofer and Dawson are silent about:

For claim 3, 23, 43, the transmitting node selects the communicating path for transmitting the packet, based upon a third criterion relating to a schedule of the packet transmission.

Sreejith from the same or similar field of endeavor discloses the following features:

For claim 3, 23, 43, Sreejith discloses, the transmitting node selects the communicating path for transmitting the packet, based upon a third criterion relating to a schedule of the packet transmission (see section 0039; fig. 4)

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Prehofer and Dawson by using the above recited features, as taught by Sreejith, in order to provide load balancing when multiple paths are available between a source and destination, thus avoiding creation of congestion

3. Claims 4, 5, 10-13, 20, 24, 25, 30-33, 40, 44, 45, 50-53, 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prehofer et al. (US 2008/0205308), Dawson et al (US 5,594,490), Sreejith et al. (US 2003/0202511) as applied to claim 3/23/43 above, further in view of Herring (US 2005/0078559)

For claim 4, 5, 10-13, 20, 24, 25, 30-33, 40, 44, 45, 50-53, 60, Prehofer, Dawson, and Sreejith discloses the claimed invention as described above.

For claims 4, 5, 24, 25, 44, 45, Prehofer discloses characterized in that the transmitting node and the receiving node are connected via a plurality of communicating paths (see fig. 5a; AR, MN; section 0014 "main route…alternative route"; section 0084,0087, 0117)

For claim 11, 31, 51, Prehofer discloses path status information includes a delay of a path (see section 0088 "delay time").

For claim 12, 32, 52, Prehofer discloses path status information includes a transmission rate of a path (see section 0084, 0086, 0088 "rate").

For claim 13, 33, 53, Sreejith discloses path status information includes a load of a path (see see figs. 3-4).

Prehofer, Dawson, and Sreejith are silent about:

For claims 4, and similarly 24, 44, and the transmitting node classifies the packets into unique flows corresponding to the communicating paths, through which the packets to be transmitted pass, as a second criterion, and selects the communicating path in retransmitting the packets

independently of the communicating path selected at the time of the first transmission as a third criterion.

For claim 5 and similarly 25, 45, and the transmitting node classifies the packets into the flows of which the number is fewer than the number of the communicating paths, through which the packets to be transmitted pass, as a second criterion, and selects the communicating path in retransmitting the packets independently of the communicating path selected at the time of the first transmission as a third criterion.

For claim 10, 30, 50, characterized in that selection of the path or thereof is made in the transmitting node as a third criterion of the transmitting node, where path selection is performed upon every packet to be input, based on path status information on a selectable path, based on a transmitted packet, and based on a transmission history after transmission of the packet specified with transmitted packet identification information.

For claim 20, 40, and 60, characterized in that path selection or a determination of a transmission interruption is made according to the policy, which differs every attribution of transmission data.

Herring from the same or similar field of endeavor discloses the following features:

For claims 4, and similarly 24, 45, Herring discloses the transmitting node classifies the packets into unique flows corresponding to the communicating paths (see section 0101 "identified by a path table...possible routes..." sections 0121-123, sections 0314-317), through which the packets to be transmitted pass, as a second criterion (see section 0101 "identified by a path table...possible routes..." sections 0121-123, sections 0314-317), and selects the communicating path in retransmitting the packets independently of the communicating path selected at the time of the first transmission as a third criterion (see section 0336 "retreansmission…resends…different physical path"; section 0315).

For claim 5 and similarly 25, 45, Herring discloses the transmitting node classifies the packets into the flows of which the number is fewer than the number of the communicating paths, through which the packets to be transmitted pass, as a second criterion (see section 0128 "picks one of these routes…four routes for each packet"; section 0101 "identified by a path table...possible routes..." sections 0121-123, sections 0314-317), and selects the communicating path in retransmitting the packets independently of the communicating path selected at the time of the first transmission as a third criterion (see section 0336 "retreansmission…resends…different physical path"; section 0315).

For claim 10, 30, 50, Herring discloses characterized in that selection of the path or thereof is made in the transmitting node as a third criterion of the transmitting node (see section 0336 "retreansmission…resends…different physical path"; section 0315; section 0101 "identified by a path table...possible routes..." sections 0121-123, sections 0314-

317), where path selection is performed upon every packet to be input (see section 0336 “retreansmission…resends…different physical path”; section 0315; section 0101 “identified by a path table...possible routes..." sections 0121-123, sections 0314-317), based on path status information on a selectable path (see section 0336 “retreansmission…resends…different physical path”; section 0315; section 0101 “identified by a path table...possible routes..." sections 0121-123, sections 0314-317), based on a transmitted packet (see section 0336 “retreansmission…resends…different physical path”; section 0315; section 0101 “identified by a path table...possible routes..." sections 0121-123, sections 0314-317), and based on a transmission history after transmission of the packet specified with transmitted packet identification information (see section 0336 “retreansmission…resends…different physical path”; section 0315; section 0101 “identified by a path table...possible routes..." sections 0121-123, sections 0314-317).

For claim 20, 40, and 60, Herring discloses characterized in that path selection or is made according to the policy, which differs every attribution of transmission data (see section 0336 “retreansmission…resends…different physical path”; section 0315; section 0101 “identified by a path table...possible routes..." sections 0121-123, sections 0314-317).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Prehofer, Dawson, and Sreejith by using the above recited features, as taught by Herring, in order to provide a method of transmitting data to a destination through an alternative path when a current path is not

delivering the packets correctly (failure), thus enabling transmission even after failure (see Herring 0336)

4. Claims 8,9,28,29,48,49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prehofer et al. (US 2008/0205308), Dawson et al (US 5,594,490), as applied to claim 1/21/41 above, further in view of Herring (US 2005/0078559)

For claim 8,9,28,29,48,49, Prehofer, Dawson, discloses the claimed invention as described above.

For claims 8,9,28,29,48,49, Prehofer discloses characterized in that the transmitting node and the receiving node are connected via a plurality of communicating paths (see fig. 5a; AR, MN; section 0014 "main route…alternative route"; section 0084,0087, 0117)

Prehofer, Dawson, and Sreejith are silent about:

For claim 8 and similarly 28, 48, the transmitting node classifies the packets into unique flows corresponding to the

communicating paths, through which the packets to be transmitted pass, as a second criterion, and selects the communicating path in retransmitting the packets independently of the communicating path selected at the time of the first transmission as a third criterion.

For claim 9 and similarly 29, 49, the transmitting node classifies the packets into the flows of which the number is fewer than the number of the communicating paths, through which the packets to be transmitted pass, as a second criterion, and selects the

communicating path in retransmitting the packets independently of the communicating path selected at the time of the first transmission as a third criterion.

Herring from the same or similar field of endeavor discloses the following:

For claim 8 and similarly 28, 48, Herring discloses the transmitting node classifies the packets into unique flows corresponding to the communicating paths , through which the packets to be transmitted pass, as a second criterion (see section 0101 "identified by a path table...possible routes..." sections 0121-123, sections 0314-317), and selects the communicating path in retransmitting the packets

independently of the communicating path selected at the time of the first transmission as a third criterion (see section 0336 "retreansmission…resends…different physical path"; section 0315).

For claim 9 and similarly 29, 49, Herring discloses the transmitting node classifies the packets into the flows of which the number is fewer than the number of the communicating paths, through which the packets to be transmitted pass, as a second criterion (see section 0128 "picks one of these routes…four routes for each packet"; section 0101 "identified by a path table...possible routes..." sections 0121-123, sections 0314-317), and selects the communicating path in retransmitting the packets independently of the communicating path selected at the time of the first transmission as a third criterion (see section 0336 "retreansmission…resends…different physical path"; section 0315).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Prehofer, Dawson, and Sreejith by using

the above recited features, as taught by Herring, in order to provide a method of transmitting data to a destination through an alternative path when a current path is not delivering the packets correctly (failure), thus enabling transmission even after failure (see Herring 0336)

5. Claims 14, 15, 34, 35, 54,55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prehofer et al. (US 2008/0205308), Dawson et al (US 5,594,490), Herring (US 2005/0078559), Sreejith et al. (US 2003/0202511) as applied to claim 10/30/50 above, further in view of Ogier et al (US 2003/0179742)

For claim 14, 15, 34, 35, 54,55, Prehofer, Dawson, Herring and Sreejith discloses the claimed invention as described above.

Prehofer, Dawson, Herring and Sreejith are silent about:

For claim 14, and similarly 34,54, further comprising the step of correcting a transmission cost calculation result regarding a packet transmitted before updating path status information of each path, when the path status information is updated for path selection.

For claim 15, and similarly 35,55, further comprising the step of discarding a history prior to a first packet transmitted on or after a time from which the latest path status information is effective, when a transmission cost calculation result of each path is corrected.

Ogier from the same or similar field of endeavor discloses the following features:

For claim 14, and similarly 34,54, Ogier discloses further comprising the step of correcting a transmission cost calculation result regarding a packet transmitted before updating path status information of each path (see section 0225-227 "period…allow all intermediate stations..updated with new cost…freezing period…,"; section 0140 "record of the cumulative cost…to each destination…) when the path status information is updated for path selection (see section 0225-251 "update stations…before…select one of them...route…freezing").

For claim 15, and similarly 35,55, Ogier discloses further comprising the step of discarding a history prior to a first packet transmitted on a time from which the latest path status information is effective (see section 0198 "has not been updated for Gtimeout, the that entry is deleted"), when a transmission cost calculation result of each path is corrected (see section 0225-227 "period…allow all intermediate stations..updated with new cost…freezing period…,"; section 0140 "record of the cumulative cost…to each destination…).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Prehofer, Dawson, Herring and Sreejith by using the above recited features, as taught by Ogier, in order to provide mobile wireless network that can perform reliably and efficiently despite the aforementioned difficulties associated with the mobility of the communication entities in the network (see Ogier sections 0006-15)

6. Claims 16, 36, 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prehofer et al. (US 2008/0205308), Dawson et al (US 5,594,490), Herring (US 2005/0078559), Sreejith et al. (US 2003/0202511) as applied to claim 10/30/50 above, further in view of Schuster et al (US 6,512,761)

For claim 16, 36, 56, Prehofer, Dawson, Herring and Sreejith discloses the claimed invention as described above.

Prehofer, Dawson, Herring and Sreejith are silent about:

For claim 16, 36, 56, further comprising the step of selecting as a packet transmission path a path having an earliest estimation value of a reception completion time at a reception node.

Schuster from the same or similar field of endeavor discloses the following features:

For claim 16, 36, 56, Schuster discloses further comprising the step of selecting as a packet transmission path a path having an earliest estimation value of a reception completion time at a reception node (see col 5 line 35 through col 6 lines 15 "select the transmission path having the lowest delay").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Prehofer, Dawson, Herring and Sreejith by using the above recited features, as taught by Schuster, in order to provide improved method of assessing, improving and managing real-time media transmission over switched-packet networks (see Schuster col 5)

7. Claims 17, 37, 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prehofer et al. (US 2008/0205308), Dawson et al (US 5,594,490), Herring (US 2005/0078559), Sreejith et al. (US 2003/0202511) as applied to claim 10/30/50 above, further in view of Gorsuch (US 7,024,222)

For claim 17, 37, 57, Prehofer, Dawson, Herring and Sreejith discloses the claimed invention as described above.

Prehofer, Dawson, Herring and Sreejith are silent about:

For claim 17, 37, 57, step of selecting as a packet transmission path a path having a largest estimation value of a data amount, which can be completely received by a specific time at a reception node.

Gorsuch from the same or similar field of endeavor discloses the following features:

For claim 17, 37, 57, Gorsuch discloses step of selecting as a packet transmission path a path having a largest estimation value of a data amount, which can be completely received by a specific time at a reception node (see claim 48 "selecting path…highest communication rate").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Prehofer, Dawson, Herring and Sreejith by using the above recited features, as taught by Gorsuch, in order to provide a device which can automatically select the cheaper and faster W-LAN when possible, e.g., when within its range, and to resort to the long range cellular network when access to the W-LAN is not possible or practical (see Gorsuch col 2)

8. Claims 18, 19, 38,39, 58,59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prehofer et al. (US 2008/0205308), Dawson et al (US 5,594,490), Herring (US 2005/0078559), Sreejith et al. (US 2003/0202511) as applied to claim 10/30/50 above, further in view of Poppe et al (US 2004/0151115)

For claim 18, 19, 38,39, 58,59, Prehofer, Dawson, Herring and Sreejith discloses the claimed invention as described above.

Prehofer, Dawson, Herring and Sreejith are silent about:

For claim 18, 38,58, further the step of interrupting data transmission according to an estimated current path status in each path.

For claim 19, 39,59, wherein a condition for interruption of said data transmission is that an estimated reception completion time is equal to or greater than a specific value.

Poppe from the same or similar field of endeavor discloses the following features:

For claim 18, 38,58, Poppe discloses further the step of interrupting data transmission according to an estimated current path status in each path (see section 0073 "burst is discarded…scheduling…stops").

For claim 19, 39,59, Poppe discloses wherein a condition for interruption of said data transmission is that an estimated reception completion time is equal to or greater than a specific value (see section 0073 "delay…greater…Dmax…burst is discarded…scheduling…stops")

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Prehofer, Dawson, Herring and Sreejith by using the above recited features, as taught by Poppe, in order to provide a method of

decreasing wasted bandwidth on packets which can not realize their Qos (maximum allowable delay)

Response to Arguments

9. Applicant's arguments filed 08/28/2009 have been fully considered but they are not persuasive.

For claim 1, the applicant summarizes the claim and gives a brief summary of the Prehofer reference on pages 20-21. Lastly the applicant merely concludes that "Proefer does not teach or suggest the abovementioned sequencing of packets as recited in claim 1". As clearly stated in the rejection Profer is not used to teach the sequencing of packets, but such teachings and the complete rejection of claim 1 is based on the combination of Proefer and Dawson. Lastly, the applicant entire analysis of the teachings of Dawson is merely “Dawson is cited essentially for showing TCP’s provision of packets in a sequential order”. Since there is not analysis / discussion / arguments on how and why the combination of Proefer and Dawson does not teach the sequencing in claim 1, the examiner can not effectively respond the merely conclusory allegations that claim 1 is patentable over Prehofer.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENAN CEHIC whose telephone number is (571)270-3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KWANG BIN YAO can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenan Cehic/

Examiner, Art Unit 2473

/KWANG B. YAO/

Supervisory Patent Examiner, Art Unit 2473